

RESPONSE TO RESTRICTION REQUIREMENT

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Title: THIN-FILM BATTERY HAVING ULTRA-THIN ELECTROLYTE AND ASSOCIATED METHOD

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Please amend claims 1 and 26, cancel claim 35, and add claim 37 as follows:

In the Claims

1 1. (Currently Amended) A method of fabricating an energy storage device, comprising:
2 providing a substrate;
3 forming an electrode first film on the substrate;
4 forming an electrolyte second film on the first film, wherein forming the electrolyte second
5 film includes:
6 depositing electrolyte material using a deposition source; and
7 supplying energized particles from a second source such that the particles provide
8 energy to the electrolyte material to deposit the electrolyte material into a
9 desired film structure; and
10 forming an electrode third film on the second film.

1 2. (Original) The method of claim 1, wherein supplying energized particles includes supplying
2 ions having an energy of greater than about 5 eV.

1 3. (Original) The method of claim 1, wherein supplying energized particles includes supplying
2 ions having an energy of less than about 3000 eV.

1 4. (Original) The method of claim 1, wherein supplying energized particles includes supplying
2 ions having an energy in the range of about 5 eV to about 500 eV.

1 5. (Original) The method of claim 1, wherein supplying energized particles includes supplying
2 ions having an energy in the range of about 5 eV to about 250 eV.

1 6. (Original) The method of claim 1, wherein supplying energized particles includes supplying

2 ions having an energy in the range of about 10 eV to about 200 eV.

1 7. (Original) The method of claim 1, wherein supplying energized particles includes supplying
2 ions having an energy in the range of about 0 eV to about 40 eV.

1 8. (Original) The method of claim 1, wherein forming the electrolyte second film includes forming
2 the electrolyte film to a thickness of less than about 5000 Angstroms.

1 9. (Original) The method of claim 1, wherein forming the electrolyte second film includes forming
2 the electrolyte film to a thickness of less than about 2500 Angstroms.

1 10. (Original) The method of claim 1, wherein forming the electrolyte second film includes forming
2 the electrolyte film to a thickness of less than about 1000 Angstroms.

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1 11. (Original) The method of claim 1, wherein forming the electrolyte second film includes forming
2 the electrolyte film to a thickness of less than about 500 Angstroms.

1 12. (Original) The method of claim 1, wherein forming the electrolyte second film includes forming
2 the electrolyte film to a thickness of less than about 250 Angstroms.

1 13. (Original) The method of claim 1, wherein forming the electrolyte second film includes forming
2 the electrolyte film to a thickness of less than about 100 Angstroms.

1 14. (Original) The method of claim 1, wherein forming the electrolyte second film includes forming
2 the electrolyte film to a thickness in a range of about 10 Angstroms to about 200 Angstroms.

1 15. (Original) The method of claim 1, wherein forming the electrolyte second film includes forming
2 the electrolyte film to a thickness in a range of about 10 Angstroms to about 100 Angstroms.

1 16. (Original) The method of claim 1, wherein depositing electrolyte material includes depositing
2 Li_3PO_4 electrolyte material.

1 17. (Original) The method of claim 1, wherein supplying energized particles includes supplying
2 energized nitrogen particles, and reacting the nitrogen particles with the Li_3PO_4 electrolyte material.

1 18. (Original) The method of claim 1, wherein forming the electrolyte second film includes
2 providing a nitrogen-enriched atmosphere in which the Li_3PO_4 electrolyte material is deposited.

1 19. (Original) The method of claim 1, wherein forming the electrolyte film includes forming the
2 electrolyte film to a thickness sufficient to insulate the electrode first film from the electrode second
3 film and to allow ion transport between the electrode first film and the electrode second film.

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1 20. (Original) The method of claim 19, wherein forming the electrode first film includes depositing
2 at least one of a metal and an intercalation material.

1 21. (Original) The method of claim 20, wherein forming the electrode third film includes depositing
2 at least one of a metal and an intercalation material.

1 22. (Original) The method of claim 1, wherein forming the electrolyte second film includes forming
2 the electrolyte film to a thickness in a range of about 1 nanometer to about 250 nanometers.

1 23. (Original) The method of any of claims 1 through 22, wherein the electrolyte second film is
2 lithium phosphorus oxynitride.

1 24. (Original) The method of any of claims 1 through 22, wherein the electrolyte second film is a
2 silicon dioxide.

1 25. (Original) The method of any of claims 1 through 22, wherein the electrolyte second film is an

2 aluminum oxide.

1 26. (Currently amended) A solid-state energy-storage device, comprising:
 2 an electrode first film;
 3 an electrolyte second film deposited with energized particles from a secondary source such
 4 that the particles provide energy to the electrolyte material to deposit the electrolyte material into a
 5 desired film structure;
 6 an electrode third film; ~~and~~
 7 ~~ions having an energy of greater than about 5 eV.~~

1 27. (Original) The device of claim 26, wherein the electrolyte second film has a thickness of less
 2 than about 2500 Angstroms.

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 1 28. (Original) The device of claim 26, wherein the electrolyte second film has a thickness of less
 2 than about 1000 Angstroms.

1 29. (Original) The device of claim 26, wherein the electrolyte second film has a thickness of less
 2 than about 500 Angstroms.

1 30. (Original) The device of claim 26, wherein the electrolyte second film has a thickness of less
 2 than about 250 Angstroms.

1 31. (Original) The device of claim 26, wherein the electrolyte second film has a thickness of less
 2 than about 100 Angstroms.

1 32. (Original) The device of claim 26, wherein the electrolyte second film has a thickness in a range
 2 of about 10 Angstroms to about 200 Angstroms.

1 33. (Original) The device of claim 26, wherein the electrolyte second film has a thickness in a range

2 of about 10 Angstroms to about 100 Angstroms.

1 34. (Original) The device of claim 26, wherein the electrolyte first film includes a lithium
2 intercalation material.

1 35. (Cancelled)

1 36. (Original) The device according to claim 26, wherein the first film includes a vanadium oxide,
2 the second film includes lithium phosphorus oxynitride, and the third film includes a lithium
3 intercalation material.

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1 37. (New) An apparatus comprising:
2 a substrate;
3 means forming an electrode first film on the substrate;
4 means for forming an electrolyte second film on the first film, wherein the means for
5 forming the electrolyte second film includes:
6 means for depositing electrolyte material using a deposition source; and
7 means for supplying energized particles from a second source such that the particles
8 provide energy to the electrolyte material to deposit the electrolyte material
9 into a desired film structure; and
10 means for forming an electrode third film on the second film.